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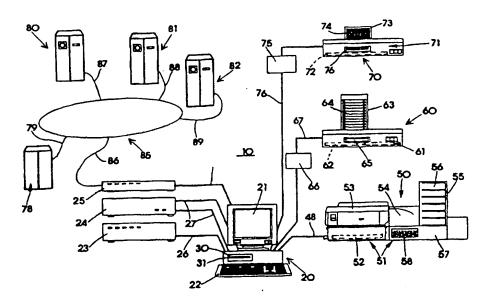
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(54) Title: ELECTRONIC-TELEMATIC-MECHANICAL SYSTEM FOR SELLING COPIES OF LITERARY, AUDIO, VIDEO WORKS, PRODUCED ON REQUEST



(57) Abstract

Electronic-telematic-mechanical system for sales of literary works, tapecassettes, videocassettes in general that can be created from texts, sounds and still or moving pictures, and be convertible into electronic data for storage that comprises installation, at the selling point (10), of a computer (20) connected to a keybooard (22), a screen (21) and memory store (23, 80-82) and comprising a program by means of which, after typing the characteristics of the work onto the keyboard (22), the c rresponding data is recalled from the store (23, 80-82) and sent to ne or other of the apparatuses (51, 71) in the installations (50, 70) for the respective production of literary works, tapecassettes, videocassettes, compact disks, optico-magnetic carriers in general.

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Electronic-telematic-mechanical system for selling copies of literary, audio, video works, produced on request

The invention concerns electronic and telematic systems for recording and producing written material, sounds and pictures of works as a whole, in reading form such as books, periodicals and newspapers and on carriers for audio and video such as tapes and optic, magnetic and optico-magnetic disks, smart cards and their equivalents.

Printing means for memory storage and for reading works produced on paper and made up in books, periodicals, newspapers and the like are well known and widely used.

Similarly known are those means for recording and reproducing sounds and pictures such as tapecassettes and videocassettes, compact disks, floppy disks, smart cards and optico-magnetic carriers in general.

Those who produce and sell such means must make available a certain number of copies of every new work to create stocks in warehouses or at selling points such as booksellers shops and newspaper stands, retail outlets generally.

Such arrangements involve considerable difficulties as it is almost impossible to foresee exactly how many copies can be sold within a short time or whether a new work, perhaps produced in other countries, will be successful or not.

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This means frequent accumulations of stocks which may be sold slowly or perhaps never, or the contrary when too little is produced too late to cope with a momentary demand, or again, non-availability of works which have sold very well abroad.

Many works are not translated and distributed because costs are considered greater than their possibilities of success. The result is economic losses either because too much capital is tied up or because orders have to be left unfulfilled.

It is common knowledge that all over the world immense stocks are lying in bookshops, music shops selling compact disks, tape cassettes, videos, optic, magnetic and optico-magnetic disks.

There is a demand for many of these works but those interested cannot get hold of them because the cost of moving them is too high and the time needed to do it is too long.

To this must be added the enormous difficulties existing all over the world for many people wanting some particular work.

Adopting the new means offered by electronics and telematics and technical systems never before conceived, the present invention solves these problems as will be explained below.

Subject of the invention is an electronic-telematic-mechanical system for sales of literary, audio and video works that can be created with texts, sounds and fixed or moving picitures convertible into memory-stored electronic data.

A processing unit, one or more monitors and mass storage units are installed at the point of sale and are interfaced to facilitate use by the customer of a keyboard, touch-sensitive screen and other means. Further equipment must be available for printing on paper and for binding books, for recording tapecassettes and videocassettes, compact disks, floppy disks, optico-magnetic carriers in general.

The proc ssing unit contains a program by means of which, when the characteristics of some particular work have been typed on a keyboard or alternative interfacing means, the processing unit recalls the corresponding data for that work from the mass storage unit or from the local area network (LAN) or wide area network (WAN) and passes them on to the apparatus able to reproduce them; namely to whichever apparatus can reproduce literary works on paper such as books periodicals newspapers and the like, tapecassettes, videocassettes, compact disks, floppy disks, smart cards, works on other optic, magnetic or optico-magnetic carriers.

This system can comprise electronic means for helping the customer to type on the keyboard the characteristics for a certain work, such as codes which the management of that selling point has given to individual works and appear in lists visualizable on the computer's screen.

Suitable devices tell the customer how much the particular work will cost for confirmation of the order.

Adequate means arrange for direct and automatic delivery to the customer of the work paid for and produced.

After checking its validity, a credit card reader charges the owner of the card with the cost of the whole operation and authorizes the machine to proceed.

The processing unit is connected by a modem or network adaptor and telephone lines to one or more remote data stores situated at other selling points in other towns or even in other countries.

The various processors can also be connected to the head office of the main organization that runs the service.

Therefore, if the data on the work required are not contained in the local mass storage unit, the processor is automatically connected to the remote store that contains such data, picks them up and passes them on to the apparatus situated at the selling point able to produce and deliver the desired work.

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The system comprises file compressors that store the data corresponding to texts, sounds and pictures on magnetic or optic disks that the computer can read, then compress them by a process using mathematical algorithms making possible storage of very large quantities of data.

Expanders are then used and, on receiving the file from the store, they return it to the computer in its original form.

The apparatus for recording tapecassettes, videocassettes, compact disks, floppy disks, optico-magnetic disks, have digital-analog converters that convert the digital signals received from the computer into analog signals.

Equipment for recording tapecassettes, videocassettes, compact disks, floppy disks, optico-magnetic disks comprises an electronic card for programming, coordinating and checking, loaders for the virgin carriers used respectively for tapecassettes, videocassettes, compact disks, floppy disks, optico-magnetic disks, devices for automatically feeding them into an electronic recording body and an expulsion device that will deliver the recorded products as soon as they are ready.

The apparatus for a literary work, such as books, magazines, daily papers, etc., comprises a fast electronic printer, a stock of sheets of paper, a stock of book covers, a glue spreader.

When the text sent in by the computer has been printed, this apparatus does, or does not, apply glue to a book cover, and does or does not associate the pack of printed sheets to said cover to produce a book, a periodical, a newspaper or whatever the item concerned may be.

The system described can function from an automatic outdoor kiosk-type structure accessible from the outside and adequately protected, containing a slit for insertion of a credit card, a screen, a keyboard connected to the computer and a number of apertures through which a literary work such as a book, or a tapecassette, a vdideocassette, compact disk, floppy disk, optico-magnetic disk will be delivered.

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These apertures are connected to automatic means of mechanical transfer from the specific means for production of the various works.

The invention offers evident advantages.

All works consisting of written texts, sounds, still or moving picitures from which can be made books, periodicals, newspapers and the like, tapecassettes, videocassettes, compact disks, floppy disks, opticomagnetic disks, smart cards, obtainable from stored electronic data, can be produced immediately on request by recalling data from data banks stored either at the point of sale to which application has been made or at other points of sale, at head offices of publishing houses or of the firms handling the service.

By phone it is in fact possible to produce a book, videocassette, tapecassette or other media in a user's own country and without delay by means of data from data banks present at selling points or elsewhere situated in distant countries, Germany, the U.S. or any others.

By means of the system here invented, as most works are stored in data banks but not produced, and as data banks can be connected with any selling point, a customer can obtain at little cost and almost in real time any work existing at any selling point or produced in any part of the world.

This means that not only can stocks be drastically reduced in warehouses and shops, but also that any work existing or produced somewhere too far from the customer, can be made available.

To sum up the advantages, this invention can drastically reduce production costs and greatly increase the changes of obtaining almost any work existing in any part of the world.

30 Production of works convertible into electronic data becomes revolutionised as, instead of producing to create unsold quantities, such works, whether in writing, in the form of still or moving pictures or of voices and music, are exclusively stored in data banks anywhere in the world.

- At a lling points all that is needed is to have an open-fronted structure, accessible from the outside as well as from inside, whose computer gives instructions for production, against payment by credit card or by some other form, of the required work by recalling data from any part of the world.
- Sale of the product is in fact replaced by the right to withdraw data from data banks concerning the product typed onto the keyboard and at the same time choose the type of carrier on which it is required, namely on paper for reading, on a video or disk for viewing or listening.

All this becomes possible by simple means as regards installation and operation and at a negligible cost considering the results obtainable.

Characteristics and purposes of the invention will be made still clearer by the following examples of its execution illustrated by diagrammatically drawn figures.

- Fig.1 Operation of a selling point of electronically stored works.
- 20 Fig.2 Automatic kiosk-type structure for self-service sales.
 - Fig.3 Diagram showing how the program is executed.

A selling point 10 comprises a computer 20 with screen 21 and keyboard 22.

A computer is connected to a local mass storage point 23, to a data expander 24 and to a modern 25 by wiring 26, 27, 28, and comprises a credit card reader 30 with slit 31 for insertion of the card.

The selling point is also equipped for producing works consisting of written texts, still and moving pictures and sounds that can be stored by electronic means.

Inatallation 50 comprises means for graphic composition and binding 51 with an electronic programming and checking card 52, fast laser printer 53, chamber 54 for collecting printed sheets with an aperture 58 for delivery of the printed and bound work in book or other form, and is connected by wiring 48 to the computer 20.

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Installation 60 comprises a video recording apparatus 61 with an electronic programming and checking card 62, a loader 63 of virgin videocassettes 64, aperture 65 through which the videocassette so produced emerges, digital analog converter 66 and wiring 67 to the computer 20.

An installation 70 comprises an apparatus 71 for tapecassettes with an electronic programming and checking card 72, loader 73 of virgin cassettes 74, digital analog converter 75, wiring 76 to the computer 20.

Through network 85 and wiring 86, 87, 88, 89 a modem 25 connects up with remote memory stores 80, 81, 82 situated at other selling points or at the head office, in Italy or in other countries of the firm running the service.

15 The system functions substantially as follows:

Having asked the customer to choose an item to be reproduced, a computer reads the credit card put through slit 31 in a reader 30, and by means of a modem 25, connected to a telephone line 86, requests a computer 78, connected by wire 79 to a firm that manages the credit card, to authorize the charge made by the service the customer has chosen.

If authorization is denied a computer 20 at the selling point advises the customer that the requested service cannot be supplied.

If authorization is given the computer debits the credit card with the cost of the service and proceeds to the stage of producing the required item.

According to the customer's request, the computer contacts the data bank which has the file needed for printing.

If it concerns a successful one in great demand, this file will probably be found at a local mass storage centre 23.

In this case the computer receives the file from said centre and passes it to a file expander 24.

In order to file texts, sounds and pictures in a store that the computer is able to read, such as magnetic or optic disks, without occupying too much of their space, such texts sounds and pictures must be compressed by a processor using mathematical algorithms before they are put on disks.

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In the case of video pictures, the compression algorithms compare a succession of frames: for example, in a close-up of a person talking, a frame will only differ from the preceding one in some detail, such as lips that move or a slight shake of the head, etc., and not in the whole picture so that a frame need not necessarily be fully memorized but only the differences between frames, and this makes a great saving of storage space in a file.

In this way the size of a file can be compressed even dozens of times. The same systems are used for compressing written material and sounds.

The expander operates in the opposite way to a compressor, returning the compressed file from store to its original size and sending it to the computer 20 in that form.

Should the required file not be found in the local store, a request must be sent to the remote store that has it. In this case, through modem 25, the computer contacts by telephone 86 one of the remote computers 80, 81,

82 which will send the needed file to the computer 20 after which, as already said, it will be expanded by the expander 24.

Having received the expanded file from the expander, the computer sends it to installation 50 (if a book), to an analog digital converter 66 (if a film), to an analog digital converter 75 (if the file is vocal).

If a book is wanted the fast laser printer 53 prints the text on sheets that are then deposited in the container 54. On completion of printing, a cover 56 is taken from the loader 55 to wrap round the pack of sheets accumulated in the container 54. The glue, previously spread on the cover, is then warmed so that the loose sheets adhere to the cover thereby producing a book which is placed in the chamber 57 and delivered through the aperture 58.

If a videocassette is to be reproduced the analog digital converter 66 converts digital signals into analog signals and passes them on to the

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video recording installation 60 where one of the virgin cassettes 64 in the loader 63 is used to record the required video.

On completion of recording the cassette is delivered through aperture 65.

For reproduction of a tapecassette the analog digital converter 75 converts the digital signals into analog signals and passes them on to the audio recorder 70 which takes a virgin cassette 74 from the loader 73 to record the music ordered. When ready, the cassette is delivered to the customer through aperture 76.

The open-fronted structure 90 seen in Fig. 2, operates self-service distribution of customers' requests.

This structure includes a screen 91, a keyboard 92, a slit 93 for insertion of the credit card, and apertures 94, 95, 96 respectively for delivering a book, a tapecassette or a videocassette.

The keyboard 92, screen 91 and slit 93 are equivalent to devices 21m 22 and 31 respectively described in Fig.1 and are connected to the computer 20 or an equivalent one.

Automatic means, omitted for simplicity from the figures, transfer the products from installations 50, 60, 70 as described, to the apertures 94, 95, 96 in the open-fronted structure 90.

Mode of operation is similar to that previously described in the case of selling point 10.

The customer inserts a credit card into a slit 93, receives instructions from the screen 91 of a computer 20, follows these instructions by typing answers on the keyboard 92 and takes the ordered item which the machine has immediately produced; if a book, through aperture 94, if a videocassette, through aperture 95, if a tapecassette through aperture 96. Using Fig. 3 as a reference, the following describes how the program put

33. insertion of credit card.

34. after insertion: if "no", return to 33, if "yes" go on to 35.

into the computer implements the whole system.

- 5 35. choose the file needed for reproduction.
 - 36. take note of the cost.
 - 37. request for confirmation of the order and customer's agreement to a debit on the credit card; if "no", 38, withdraw the card and cancel the transaction; if "yes", proceed to 39.
- 39. request for agreement to debit the credit card; if "no", 40, the debit is refused, withdraw card, go to 38; if "yes" go on to 41.
 - 41. send debit for the service to credit card management.
 - 42. seek the file ordered from the data base.
 - 43. load the file ordered into the personal computer's memory.
- 15 44. expand the file.
 - 45. send file to outlying machine for printing the file ordered.
 - 46. print the file.
 - 47. delivery of the book, videocassette or tapecassette to the customer.

As the above invention has been described and explained as an example only, not limited to this, to show its essential features, it is understood that numerous changes may be made to it in accordance with industrial, commercial and other needs, and that other systems and means may be included in it without thereby causing a departure from its sphere.

The application to patent must therefore include every equivalent use of the concepts and every equivalent product executed and/or functioning according to any one or more of the characteristics given in the following claims.

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Claims

1. Electronic-telematic-mechanical system for sales of literary, audio, video works that can be created from texts, sounds, still or moving pictures convertible into memory stored electronic data,

characterized in that, at a selling point (10) installation is made of a computer (20) connected to a keyboard (22), or equivalent means, a screen (21), mass storage memory (23) and one, some or all of the installations for printing on sheets of paper and for binding written texts (50), for recording tapecassettes (60), videocassettes (70), compact disks, floppy disks, smart cards, optico-magnetic carriers generally, comprising a computer (20), a program by means of which when the characteristics of a certain work have been typed onto the keyboard (22), said computer recalls through the data bank at the mass storage, data corresponding to that of the requested work and sends them to the installations devised for reproduction and therefore, according to the type of work concerned, to one or other apparatus (51, 61, 71) possessing the requisites for respectively producing literary works on paper, such as like, tapecassettes, periodicals, newspapers and the books, videocassettes, compact disks, floppy disks, optic and magnetic disks,

20 optico-magnetic disks, smart cards, optico-magnetic carriers generally.

2. System as in claim 1,

characterized in that it comprises electronic means for assisting the user to type on the keyboard (22) or equivalent means, the characteristics corresponding to those of a certain work such as codes attributed by the manager of the selling point to individual works and contained in lists that can be seen on the screen (21) of the computer (20), means for informing the customer of the sum required for the needed work, for direct automatic delivery to the customer of the work paid for and produced,

3. System as in claim 1,

characterized in that a credit card reader (30) or equivalent, having checked on the validity of the card, debits it with the cost of the operation and authorizes the system to proceed with production of the work.

4. System as in claim 1,

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characterized in that the computer (20) is connected through a modem (25) or network adaptor and telephone lines (85-89) to one or more remote memory stores (80-82) situated at other selling points in the same or in other towns and countries, and also at operational centres at the general organization that runs the service such as publishing houses or other businesses so that if data on the requested work are not contained in the nearest mass store (23), the computer (20) can automatically connect up with remote store (80-82) that contains said data, retrieve them and send them to an installation (51, 71) situated at the point of sale (10) that is able to produce and deliver the desired work.

5. System as in claim 1,

characterized in that it comprises file compressors that, before putting data corresponding to written texts, sounds and pictures onto magnetic or optic disks which the computer (20) can read, compress said data through a processor using mathematical algorithms so as to enable very large quantities of data to be stored and, consequently, comprises expanders (24) that, on receiving the file from the store (23), pass it on to the computer (20) in its original form.

- 6. System as in claim 1,
- characterized in that the installations (60, 70) for recording tapecassettes, videocassettes, compact disks, floppy disks, smart cards, opticomagnetic carriers generally are equipped with digital-analog converters (66, 75) that convert the digital signals from the computer (20) into analog signals.
- 7, System as in claim 1, characterized in that the installations (60,70) for recording tapecassettes, videocassettes, compact disks, floppy disks, smart cards, optico-magnetic carriers generally, comprise loaders (63, 73) of virgin tapecassettes (64), videocassettes (74), compact disks, , floppy disks, smart cards, optico-magnetic carriers generally, devices for automatically feeding them into an apparatus (61, 71) in the recording installations (60, 70), with electronic programming, coordinating and checking cards (62, 72) and a device for expulsion that delivers the recorded products through apertures (65, 76) as soon as they are ready.

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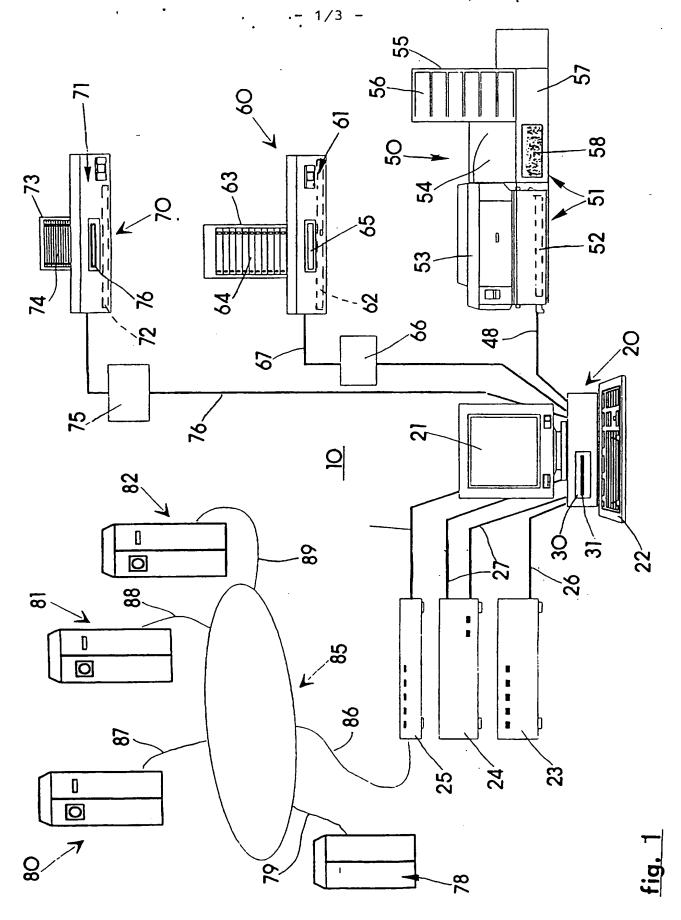
8. System as in claim 1,

characterized in that the installation (50) for reproducing literary works such as books, periodicals, newspapers and the like, comprises an apparatus for graphic composition and binding (51), with a means for programming and control (52), a fast electronic printer (53), a chamber (54) containing sheets of printed paper, a stock (55) of covers (56), a glue spreader, so that, when printing of the text transmitted by the computer (20) has been completed, said apparatus (51) does or does not apply glue to a cover (56) and then associates or does not associate the pack of printed sheets to the cover to form a book, a periodical or a newspaper, and so on, these then being delivered through the aperture (58) made for them in the chamber (57).

9. System as in claim 1,

characterized in that it comprises an automatic open-fronted structure (90) accessible from outside and suitably protected, in which there is a slit (93) for insertion of a credit card, and comprising a screen (91) a keyboard (92) connected to the computer (20) and a number of apertures (94, 95, 96) from which respectively emerge literary works such books and the like, tapecassettes, videocassettes, compact disks, floppy disks, smart cards, optico-magnetic carriers generally, said apertures being connected to automatic means of transfer from the apparatuses (51, 61, 71) that produce the different works.

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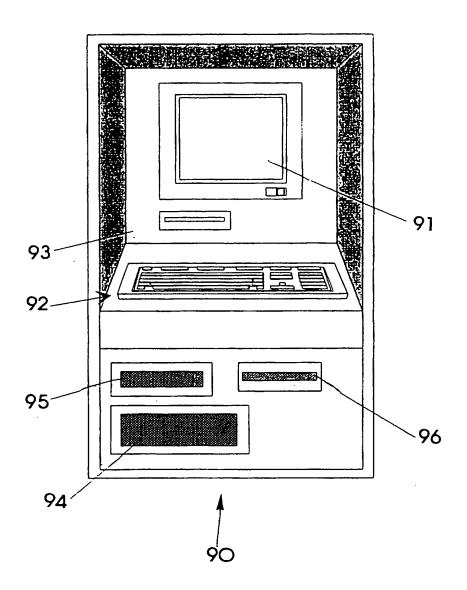


fig.2

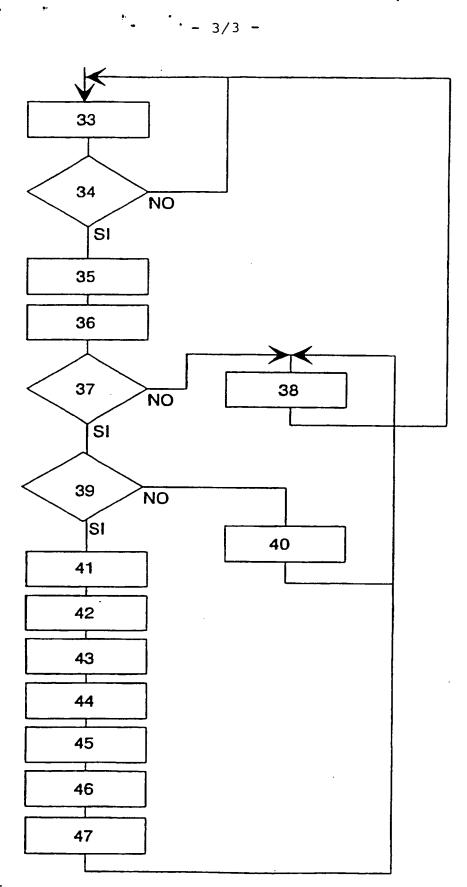


fig.3

INTERNATIONAL SEARCH .REPORT

Interr val Application No PC1/IT 96/00034

A. CLASSIFICATION OF SUBJECT MATTER 1PC 6 G07F17/16

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols) IPC 6 G07F G06F G07G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 649 121 A (IBM) 19 April 1995	1-7,9
	see page 3 - page 6 see page 8 - page 18; claims; figures 1-38	
Х	FR 2 712 104 A (CHABRERIE CHRISTIAN) 12	1-4,6,9
	May 1995 see the whole document	
x	WO 92 02888 A (ROSS HARVEY M) 20 February 1992 see the whole document	1-5,8,9
v	US 4 949 257 A (ORBACH ZVI) 14 August 1990	1-4,6,7
X A	see the whole document	9
Χ .	WO 95 05050 A (TECHNOLOGY INC B V) 16 February 1995	1,4-7
	see abstract; claims 1-3; figures 1-5	
	-/	

X Further documents are listed in the continuation of box C.	Patent family members are listed in annex.
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INTERNATIONAL SEARCH REPORT

Inter nal Application No PC1/IT 96/00034

Category Cuteen of document with indication, where appropriate, of the relevant passaget Relevant to claim No. X GB 2 199 984 A (BAI PUBLISHERS) 20 July 1988 see abstract; claims 1-4,17-20; figures 1,8,13 X W0 95 30212 A (MUSIC VENDING INC :PETERS STEVEN A (US); PERINE MICHAEL (US); BAKE) 9 November 1995 see abstract; claim 1; figures 1-3,6,7 see page 1, line 4 - page 5, line 14 see page 15 - page 28 see page 39 - page 40 see page 46 - page 49 A FR 2 636 764 A (SANDZER SERGE) 23 March 1990 see the whole document A EP 0 312 406 A (PERSONICS CORP) 19 April 1989 see abstract; figures 1,5-9 see column 1 - column 3		•	PC1/IT 96/00034
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